

1980

# Inferring Prehistoric Social and Political Organization in the Northeast

William Engelbrecht  
*Buffalo State College*

Follow this and additional works at: [https://scholarworks.umass.edu/anthro\\_res\\_rpt19](https://scholarworks.umass.edu/anthro_res_rpt19)



Part of the [Anthropology Commons](#)

---

Engelbrecht, William, "Inferring Prehistoric Social and Political Organization in the Northeast" (1980). *Research Report 19: Proceedings of the Conference on Northeastern Archaeology*. 9.

Retrieved from [https://scholarworks.umass.edu/anthro\\_res\\_rpt19/9](https://scholarworks.umass.edu/anthro_res_rpt19/9)

This Article is brought to you for free and open access by the Anthropology Department Research Reports series at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Research Report 19: Proceedings of the Conference on Northeastern Archaeology by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact [scholarworks@library.umass.edu](mailto:scholarworks@library.umass.edu).

INFERRING PREHISTORIC SOCIAL AND POLITICAL ORGANIZATION  
IN THE NORTHEAST

William Engelbrecht  
Department of Anthropology  
Buffalo State College

INTRODUCTION

It is commonly stated that there are three major goals of archaeological research: 1) reconstruction of culture history, 2) reconstruction of past lifeways, and 3) an understanding of culture process. The bulk of research in the Northeast has been directed toward the first of these goals. Recently Stoltman (1978) proposed a new culture historical model for Eastern North American prehistory. While Stoltman's scheme presents some advantages over formulations currently in use, I would agree with Dunnell's critique. "In 1978, it might have been more productive to question the value of culture-historical models than to seek to improve them" (1978: 732).

Chronological control of our data is of course necessary before the second and third goals mentioned above can be attempted. However, until we begin to address questions of broader interest than the refinement of regional chronologies and the definition of new archaeological phases, it seems unlikely that the work of Northeastern archaeologists will receive a wide audience. While attempts to infer aspects of prehistoric social or political organization have not been particularly successful in the past, such attempts are clearly related both to the reconstruction of past lifeways and an understanding of culture process. If these really are goals of archaeology, then we must search out new approaches to their study.

Many Northeastern archaeologists have recognized that making statements concerning prehistoric social or political organization is desirable, but most of these statements have been highly speculative. They are usually tacked on at the end of a descriptive study of the natural setting of the site or sites, and the nature of the material found and its distribution. Little research has been specifically designed to address questions of prehistoric social or political organization.

#### LIMITATIONS OF THE ARCHAEOLOGICAL RECORD

A major difficulty with any investigation of prehistoric social or political organization lies with the very nature of archaeological data. As Sears put it some years ago, "A prehistoric social system cannot be excavated like a house" (1961:225). Not all human activities are reflected archaeologically, and those that are may be reflected only imperfectly. Yet some aspects of prehistoric social or political organization are more easily studied by archaeologists than others. As Trigger suggests:

The strong points of archaeological data for the interpretation of socio-political behavior currently lie in their ability to provide information concerning community size and distribution of population, division of labor, relative distribution of goods and services and the symbolic representation of status differences (1974: 96).

While other areas could perhaps be cited, this paper will concentrate on how a determination of population size and distribution on a local and regional level can lead to a better understanding of social and political organization.

#### ESTIMATING POPULATION

Estimating the population of sites is at best educated guesswork and I do not have solutions for all the problems involved. I would urge the use of controls, if possible. The use of controls in archaeological interpretation is almost non-existent, though this could improve the probability that our interpretations are correct. For example, attempts to establish the population of archaeological sites might include in the sample some sites for which we have population estimates made by historic observers. While there may be problems with some of these historic estimates, they could still serve as a standard of comparison or control for the archaeological estimates.

While a number of Northeastern archaeologists have ventured population estimates for particular sites, there have been relatively few attempts to estimate regional populations, except in very general terms. Given the many problems involved with such an attempt, this is not

surprising. Problems include determining: 1) the adequacy of the site sample for an area, 2) contemporaneity of sites, 3) seasons of occupation, and 4) function. Even though regional population estimates are subject to considerable error, they should be attempted because the results can be used to test hypotheses suggested in the ethnological literature.

Is population better treated as an independent or dependent variable (see Cowgill 1975)? In the past, archaeologists tended to see population increase as dependent on technological or economic changes. Increasingly, however, population is seen as a factor causing change or as a component in a complex feedback system. Northeastern archaeologists have data which can be used to address this question. As another example, Carneiro (1970: 735) characterizes the Eastern Woodlands as an "open" environment rather than a "circumscribed" one and suggests that in an open environment the typical response to population pressure is for the population to disperse. To what extent does this formulation seem applicable to the Northeast? Why was not population greater during the Late Woodland in the Northeast (for a recent hypothesis see Gramly, 1977). What was the magnitude of depopulation resulting from European contact? We have the potential to address these questions.

Trigger (1974: 97-98) has described a demographic approach to inferring political organization which has been used by some investigators. Saunders and Price (1968) note that while population density differences between bands and tribes are not clear cut, they suggest trends. The sizes of local groups at both band and tribe levels do differ significantly. Thus, Naroll suggests that the maximum settlement size of a society is a good predictor of its social development. Such differences could be used in the archaeological definition of bands and tribes. In addition Kroeber (1955: 309) noted that tribes rarely exceed 500 persons, and Naroll (1956:690) has suggested that if the local group is over 500, authoritative officials are generally necessary. Thus, prehistoric population size and distribution can be used to suggest features of political organization, especially when combined with other lines of evidences.

At this point, a warning is perhaps in order. Determination of population size at the local or regional level should not be equated with the determination of the social or political organization of a group. Archaeologists have been inclined towards deterministic reconstructions of prehistoric social organization, taking the approach that when past environment, economy, and technology are reconstructed, social organization is easily predictable. Leach cautions against this:

There are always an indefinitely large number of alternative ways in which particular human social systems might be adapted to meet particular ecological and demographic situations (1973: 737).

Leach may be overstating the case, for it appears that the frequency of

alternative social arrangements found under similar ecological and demographic conditions is not random. However archaeologists should develop means of inferring social and political information which are independent of the determination of prehistoric technology, economy, or population, in order to avoid the problem of circularity which otherwise might arise. We should investigate the relationship between population size and distribution with other features, rather than assuming that a particular social or political phenomenon is present or absent because of a population estimate.

#### POPULATION DISTRIBUTION AND STYLE

Use of the McKern Taxonomic System in the Northeast made it clear that artifact styles vary through space. Though this system is no longer in use, Dean Snow has made the point that a number of the concepts currently in use in the Northeast grew out of this system (1978: 87-88). Many writers have noted that these same concepts have little utility for inferring social organization. For example, Willey and Phillips state:

We seldom experience the satisfaction of feeling that our units are coextensive, whether spatially or temporally, with corresponding social units, even in the simplest and most explicit of archaeological situations (1958:48).

While there are no doubt cases in which the boundaries of a phase or an archaeological culture do coincide with social, political, or even linguistic boundaries, archaeologists should not assume such a correspondence.

There are alternative approaches to the study of stylistic change through space beside the definition of new phases or archaeological cultures. One possibility is to perform a cluster analysis on similarity coefficients between sites. The clusters formed on the basis of similarity coefficients can then be compared with the actual geographical distribution of sites (for an example of this approach see Engelbrecht 1978). Another approach would be to plot stylistic change through space graphically. For example, similarity coefficients between sites could be plotted against the distance between these same sites. Contemporaneous sites that are closer to one another would be expected to be more similar than contemporaneous sites which are more distant, and similarity fall-off curves will therefore result. These curves can then be compared with the distribution of population in the region under study.

It should be expected that fall-off curves of artifact similarity will vary considerably over time and space. For example, Soja (1971:40-41) has suggested that where food is seasonally concentrated and less reliable, boundaries between groups are not rigidly defined. This situation should result in a slow fall-off curve of artifact similarity

and should be tested in an appropriate area. Certainly in band level societies, the notion of exclusive rights to specific resources seems rare, and many band societies are characterized by a flexibility in membership. Muller, in an article on the Southeast, suggests:

As population increased throughout Archaic times, there would have been increasing pressure upon groups with restricted mobility to develop local resources subject to less annual variation (1978: 287).

Such a development should be reflected in a more rapidly occurring fall-off in the distribution of artifact styles, again something which could be tested archaeologically.

In terms of inferring socio-political behavior, Soja suggests:

The key element is the existence of an identifiable disruption in the distance ordered regularity of activity patterns caused by social rather than ecological phenomena (1971: 34).

As an example of this, Figure 1 presents similarity coefficients (y-axis) which are plotted against distance in miles (x-axis). The similarity coefficients are Brainerd-Robinson Coefficients of Agreement based on ceramic attributes shared between pairs of roughly contemporaneous 16th and 17th century Iroquois village sites. The sites are from four different time periods between 1540 AD and 1640 AD. A site from one time period is compared with other sites from that same period, but not with sites from different time periods. The equation that best describes the relationship between similarity (y) and distance (x) is given by:

$$y = 191x - .0706$$

This equation is plotted in Figure 1 and has been obtained by regressing the log of the similarity coefficients on the log of the distance between sites. Both of its parameters are significant at the .01 percent level, and it explains 47.3 percent of the variation in the log of the similarity coefficients. Visual inspection suggests a great drop off in similarity within the first twenty miles. Between twenty and sixty miles the decrease in similarity is less dramatic, and beyond sixty miles the curve flattens out. Points plotted for later sites were generally closer to the line than points representing pairs of earlier sites. This does not appear to be a function of sample size.

The Iroquois village sites under consideration are spatially clustered, contemporaneous sites in the same area being five to ten miles apart. The drop in similarity on the graph within the first twenty miles

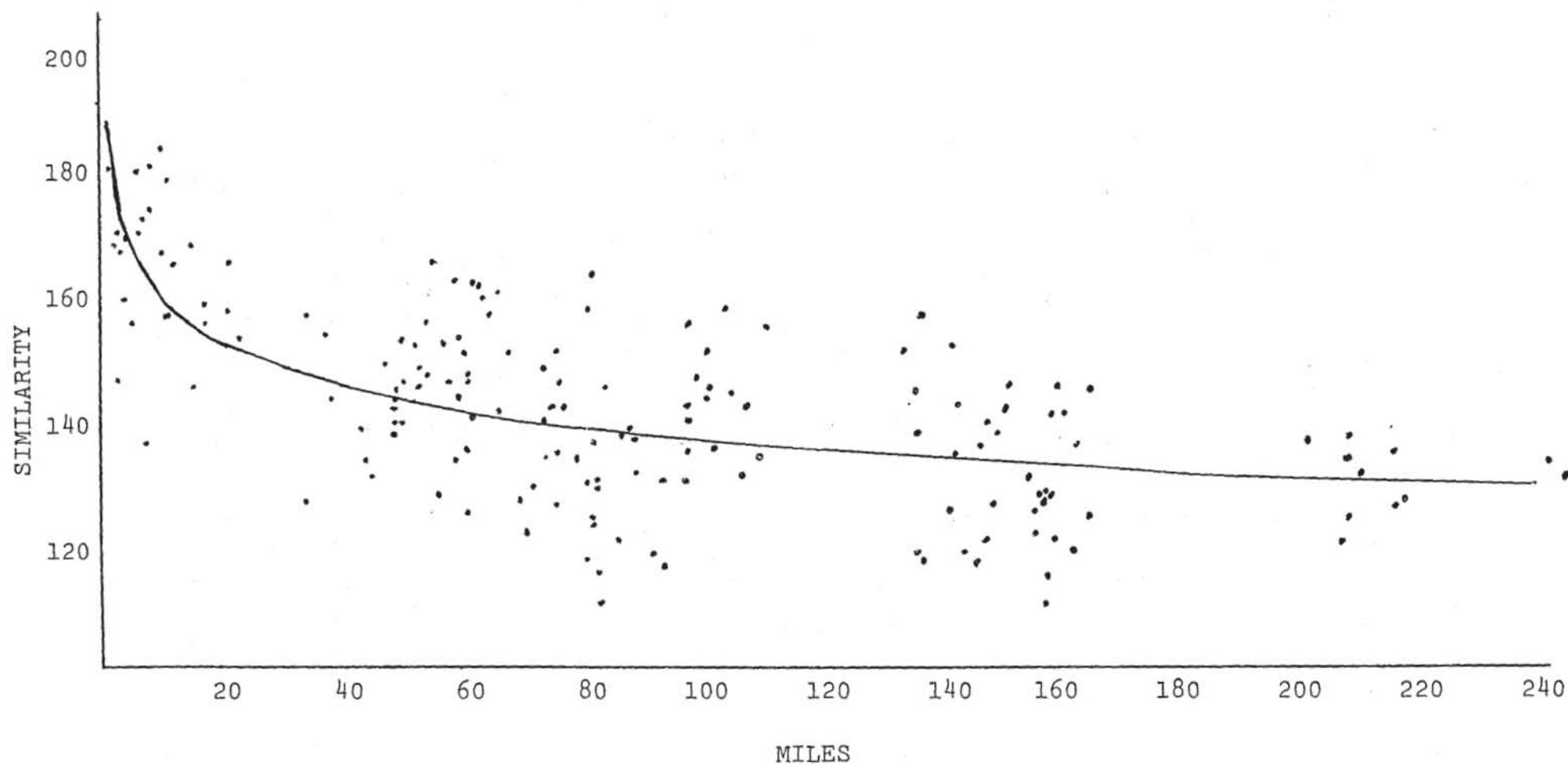


Figure 1. Brainerd-Robinson Coefficients of Agreement between contemporaneous Iroquois village sites plotted against distance.



would seem to reflect tribal organization. That is, contemporaneous sites in the same area are highly similar, those further away much less similar. Site clusters generally tend to be separated by about 55 miles, the exception being the close (16 miles) relationship between the Onondaga and the Oneida cluster. The reduced slope of the fall off curve between twenty and sixty miles would therefore relate to the distance between adjacent tribal units. The relatively flat curve beyond a distance of sixty miles would reflect the general similarity of all Iroquoian ceramics. The antiquity of the population clusters used in this study is unclear, but some may date only to the beginning of the sixteenth century. The fact that points between the earliest sites seemed to fall furthest from the line may reflect the newness of the particular population clustering observed.

A problem common to much anthropological research is the definition of boundaries, and this is especially true with the study of artifact style through space. The geographic delineation of phases or archaeological cultures is often arbitrary. Recent work has often concentrated on river valleys, two hour walk territories, or catchment areas. The present approach avoids the possible disadvantages of these geographical limitations. In considering fall off curves of artifact similarity, one need not narrowly limit the geographical area of inquiry.

#### POPULATION SIZE AND STYLE

The factors influencing variation in artifact styles are still not well understood. While spatial and temporal variation in artifact style is well documented, it is clear that they are not the only sources of variation. In this section I would like to explore the relationship between ceramic style and 1) site size (local population size) and 2) regional population size.

##### 1. Site Size

To assess the effect of site size on ceramic style, I will turn to a controlled comparison. Since many variables affect the patterning of material remains, the more of these that can be held constant in any comparison, the more useful that comparison is likely to be. Three contemporaneous early seventeenth century Seneca village sites: Dutch Hollow, Factory Hollow, and Cornish are compared (Engelbrecht 1971: 74-75). Dutch Hollow, the largest, is estimated to be between 10-15 acres in size while Factory Hollow is somewhat smaller, being between 8-10 acres in size. Cornish is around two acres in size. Dutch Hollow is in the western Seneca area while Factory Hollow is in the eastern area. Cornish is two miles south of Factory Hollow. In this study, Dutch Hollow is represented by 215 vessels, Factory Hollow by 379, and Cornish by 158. Dutch Hollow, the furthest west, is consistently more similar to sites to the east of the Seneca than is Factory Hollow, though the latter is closer. Factory Hollow is consistently more similar to these same sites than Cornish (see Table 1).



## SIMILARITY COEFFICIENTS

	Dutch Hollow	Factory Hollow	Cornish
<u>CAYUGA SITES</u>			
Klinko (t <sub>1</sub> )	121	123	118
Genoa Fort (t <sub>3</sub> )	165	158	154
<u>SUSQUEHANNOCK SITE</u>			
Engelbert (t <sub>2</sub> )	145	143	134
<u>ONODAGA SITES</u>			
Cemetery (t <sub>1</sub> )	118	110	101
Barnes (t <sub>2</sub> )	121	116	109
Temperance (t <sub>3</sub> )	132	130	124
Atwell (t <sub>3</sub> )	138	131	125
Chase (t <sub>3</sub> )	140	138	131
<u>ONEIDA SITES</u>			
Nichols Pond (t <sub>1</sub> )	117	109	101
Buyea (t <sub>1</sub> )	122	115	108
Bach (t <sub>2</sub> )	137	134	124
Diablo (t <sub>2</sub> )	140	137	128
Wayland-Smith (t <sub>3</sub> )	146	144	136
Thurston (t <sub>4</sub> )	149	146	137
<u>MOHAWK SITES</u>			
Smith (t <sub>2</sub> )	116	106	101
Wagners Hollow (t <sub>3</sub> )	131	127	121
Cromwell (t <sub>3</sub> )	125	121	115
Barker (t <sub>3</sub> )	137	129	122
Martin (t <sub>4</sub> )	128	125	120

Table 1	t <sub>1</sub>	1500 - 1550 A.D.	little or no evidence of European material
	t <sub>2</sub>	1550 - 1590 A.D.	some evidence of European material
	t <sub>3</sub>	1590 - 1615 A.D.	a significant amount of European material, up to 1/4 of the total material recovered
	t <sub>4</sub>	1615 - 1640 A.D.	a great deal of trade material, some of which is early 17th century.

Dutch Hollow, Factory Hollow, and Cornish are designated t<sub>3</sub>.

This pattern is explainable neither in terms of spatial nor temporal variation. Rather, the pattern would seem to relate to the different size of the three sites. The fact that the largest site, Dutch Hollow, was most similar to the eastern sites and Cornish, the smallest, was least similar suggests that the ceramics from Dutch Hollow are the most heterogeneous of the three. Coefficients of homogeneity (see Whallon, 1968) were calculated and bore out the prediction. Dutch Hollow pottery was the most heterogeneous while Cornish pottery was the most homogeneous. The explanation for this relationship between site size and ceramic patterning for early seventeenth century Seneca sites is not immediately apparent.

## 2. Regional Population Size

In the 1600's the Seneca had two large villages and two smaller villages and were probably the largest of the Five Nation Iroquois groups, rivalled in size only by the Mohawk. In the 1600's the Oneida are believed to have had only a single village and were the smallest of the Five Nation Iroquois. European trade material is found on both Seneca and Oneida sites of the period, suggesting contact between these groups and Europeans, or between these groups and other Indian groups with European items. On these same Seneca sites, the pottery is homogeneous, though as mentioned above the larger sites exhibit greater ceramic variability. Ceramic heterogeneity on contemporary Oneida sites is much greater, even though these sites are generally smaller. The ceramics suggest that the Oneida had greater contact with other groups than did the Seneca. Yet, the trade material implies that both groups had similar levels of external contact. Thus, the degree of external contact inferred from a consideration of the ceramics is different from the degree of external contact inferred from trade material. For the Iroquois c. 1600 AD, there appears to be an inverse relationship between regional population size and ceramic heterogeneity. That is, the larger the regional (tribal) population, the greater the ceramic homogeneity. This is the opposite of the pattern noted for site size (local population) and ceramic heterogeneity.

At a recent conference in Binghamton, Hodder (1978) questioned the assumption that artifactual similarity between areas varied directly with the amount of interaction, citing living groups maintaining high interaction levels but showing little similarity in material culture. He suggests that similarities in material culture reflect not what people do, but what people feel about their relationship with one another (see also Wobst 1977). If Hodder's interpretation is valid, this suggests that among the protohistoric Iroquois, larger groups were less likely to borrow artifact styles from smaller groups because of their feelings toward these groups, feelings which might have a basis in the group's numerical superiority. While alternative explanations for the above patterning are possible, data from the Northeast and elsewhere should be examined to see if a similar relationship holds.

## POPULATION PATTERNS OVER TIME

The goal of understanding culture process, mentioned in the introduction, depends on understanding changes in a social system over time. Changes in local and regional population size and distribution should be considered in any hypothesis seeking to explain changes in social systems. As mentioned earlier, changes in the degree of sedentism might be reflected in the fall-off curves of artifact similarity through space. Binford (1968) hypothesized that a shift to a more sedentary way of life may be an important factor in population growth. Sites like Koster in Illinois and the Boylston Street Fish Weir in Massachusetts suggest that some Late Archaic populations were becoming fairly sedentary. We may ask what effects such a shift to sedentism had on population and on the social organization of such populations. Ethnographically, Yengoyan (cited in Harris 1978) noted an intensification of ritual life among the Pitjandjera of Australia when they became sedentary. Might increasing sedentism and increasing ritual in the Northeast be correlated. To what extent does the appearance of pottery correlate with sedentism?

The study of population patterns over time also has the potential for shedding light on the origin of tribes in the Northeast. "Tribe" has been used to refer to a variety of social manifestations and thus can be criticised as unspecific. Renfrew (1978:99) has recently suggested that archaeologists avoid Service's typology (band, tribe, chiefdom, state) replacing it with one based on the spatial distribution of sites. However since these terms are well established in the literature, it would seem more realistic to define their meaning archaeologically. Surprisingly little has been written on the origin and development of tribal organization in the Northeast considering the anthropological importance of the issue. Much of what has been written is purely speculative. For example, Bender recently stated:

Recent evidence from the northern Maritime province seems to push this development of tribal configuration back to the mid 6th millennium (1978:217).

No explanation of this statement is offered, making evaluation difficult.

Fried (1975) has suggested that the emergence of tribes in general represents a response to contact with groups of a higher level of socio-political development, or a response to imposed external political control as in European colonialism. With a satisfactory archaeological definition of tribe, this hypothesis could be tested with data from the Northeast. Was Hopewell a chiefdom? Did Mississippian society influence Northeastern tribal development? Did tribes appear in some areas of the Northeast only after European contact? No single investigator could answer these questions in their entirety. However a number of investigators could coordinate their research so as to address them, thereby illuminating an anthropological question of general interest.

## CONCLUSION

The study of past social and political organization is important, but it has often been neglected. This paper is not a comprehensive treatment of the subject. Rather it focuses on population size, distribution, and stability, and their relation to social and political organization. Since this symposium is concerned with directions for future research in the Northeast, I urge that one goal be the accumulation of more accurate prehistoric population data. These data should then be considered in conjunction with other variables which might also affect social and political organization. Ultimately, we must look for systematic relationships between variables and then seek to explain these. Human social organization is multi-faceted and its study suggests that diverse lines of evidence be pursued. A clearer understanding of the interrelation between prehistoric population and other variables can lead to a better understanding of Northeastern prehistory and an advance in anthropological knowledge.

Acknowledgements I would like to thank the following individuals who commented on an early draft of this paper: George Blackford, Sarunas Milisauskas, Donald Mitchell, George Thomashevich, and Charles Vandreil.

## REFERENCES CITED

- Bender, Barbara  
1978 Gatherer-hunter to farmer: a social perspective. World Archaeology 10(2):204-222.
- Binford, Lewis  
1968 Post-Pleistocene adaptations. In New Perspectives in Archaeology, edited by Sally R. Binford and Lewis R. Binford, pp. 313-341. Aldine.
- Carneiro, Robert L.  
1970 A theory of the origin of the state. Science 169(3974): 733-738.
- Cowgill, George L.  
1975 On causes and consequences of ancient and modern population changes. American Anthropologist 77(3):505-525.
- Dunnell, Robert C.  
1978 Comment. Current Anthropology 19(4):732.
- Engelbrecht, William  
1971 A Stylistic Analysis of New York Iroquois Pottery. Ph.D dissertation, University of Michigan.  
1978 Ceramic patterning between New York Iroquois sites. In The Spatial Organization of Culture, edited by Ian Hodder, pp. 141-152. Duckworth.
- Fried, Morton  
1975 The Notion of Tribe. Cummings, Menlo Park, California.
- Gramly, Richard M.  
1977 Deerskins and hunting territories: competition for a scarce resource of the northeastern woodlands. American Antiquity 42(4):601-605.
- Harris, David R.  
1978 Settling down: an evolutionary model for the transformation of mobile bands into sedentary communities. In Evolution of Social Systems, edited by J. Friedman and M.J. Rowlands, pp. 401-417. Univ. of Pittsburgh Press.
- Hodder, Ian  
1978 Recent trends in the regional analysis of artifact distributions. Paper presented at colloquium: Spatial analysis in archaeology, Binghamton.



- Kroeber, A.L.  
1955 Nature of the land-holding group. Ethnohistory 2: 303-314.
- Leach, Edmund  
1973 Concluding address. In The Explanation of Culture Change: Models in Prehistory, edited by Colin Renfrew, pp. 761-771. Duckworth.
- Muller, Jon D.  
1978 The Southeast. Ancient Native Americans, edited by Jesse D. Jennings. W.H. Freeman and Co.
- Naroll, R.  
1956 A preliminary index of social development. American Anthropologist 58:687-715.
- Renfrew, Colin  
1978 Space, time and polity. In The Evolution of Social Systems, edited by J. Friedman and M.J. Rowlands, pp. 85-112. University of Pittsburgh Press.
- Sanders, William I. and Barbara J. Price  
1968 Mesoamerica: the evolution of a civilization. Random House.
- Sears, William H.  
1961 The study of social and religious systems in North American archaeology. Current Anthropology 2(3):223-231.
- Snow, Dean R.  
1978 Shaking down the new paradigm. Archaeology of Eastern North America 6:87-91.
- Soja, E.W.  
1971 The political organization of space. Association of American Geographers Commission on College Geography, Resource Paper 8.
- Stoltman, James B.  
1978 Temporal models in prehistory: an example from eastern North America. Current Anthropology 19(4):703-746.
- Trigger, Bruce  
1974 The archaeology of government. World Archaeology 6(1):95-106.
- Whallon, Robert J.  
1968 Investigations of Late Prehistoric social organization in New York State. In New Perspectives in Archaeology, edited by Sally R. Binford and Lewis R. Binford, pp. 223-244. Aldine.
- Willey, Gordon R. and Philip Phillips  
1958 Method and Theory in American Archaeology (1962 ed.). Phoenix Books.

Wobst, Martin

1977 Stylistic behavior and information exchange. In For the Director: Research Essays in Honor of James B. Griffin, edited by Charles Cleland. University of Michigan Museum of Anthropology, Anthropological Papers 61:317-342.